



BRULE RIVER STATE FOREST MASTER PLAN

FACT SHEET

Forestry Resources

History

Historic events that have impacted the Brule River State Forest (BRSF) are important to understand when considering condition of current forest cover, current forest management, and potential future forest cover type conditions.

Prior to the late 1800's the forest cover type disturbance was primarily from natural forces of weather and fire with very little human influenced disturbance. One exception was in the "barrens" in the southeastern part of the Forest where Native Americans used fire to manage blueberry crops.

Around 1890, logging of pine began in the Brule valley. Harvesting was done for the purpose of producing lumber and was conducted with little consideration of contemporary or future impacts to the resource. By 1909, most of the "virgin" timber was logged from the watershed with the exception of the upper river valley where older pine stands and the cedar bog received limited harvest. Other than small scattered stands, much of the landscape was deforested. The cut over landscape allowed rapid runoff contributing to flooding of the river.

Another major impact to the land was uncontrolled wildfire. With a large volume of logging slash and increasing activity of humans in the valley, wildfires were frequent and their impacts even more damaging than the unmanaged harvesting of the 1890's. Wild fire touched just about every acre of what is currently the BRSF during the period of 1890 - 1935. These fires along with increased agricultural use set the stage for the condition of the forest.

With the establishment of the BRSF in 1932, it was very obvious what the first land management needs would be; first was to protect the land from fire and second was to reforest the land. Camp Brule Civilian Conservation Corps was a prime labor source for both these efforts from 1934 through 1942. Massive coniferous plantings of primarily jack pine were established, not always successfully, on abandoned agricultural fields and burned over areas in the sand country.

Natural regeneration of seed origin aspen after fire disturbance took place over much of the western, central, and northern areas of the BRSF. Other tree species associated with the aspen that regenerated well with fire disturbance were white birch and red oak on the sandier soil types. Where seed trees had escaped fire, fir readily regenerated on the loamy and clay textured soils in the central and northern portions of the Forest. Large scale planting efforts of jack and red pine continued well into the early 1970's. These planted and naturally regenerated second growth forest cover types created the future forest management opportunities. Up until the mid 1940's there was very little managed forest harvesting done, most of the reported harvest volume from 1910 to 1940 was due to salvage of wind and fire damaged trees.

Forest Regulation

Annual allowable cut (ACC) is a forestry term for the degree of cutting that can be done annually to result in regulated or sustainable forest. The first AAC for BRSF was based on harvestable volume and was set at 500 cords per year starting in the 1940's. In 1960, forest reconnaissance mapping was instituted on state and county forests, including BRSF, and enabled forest managers to calculate AAC based on acreage of the major forest cover types. Utilizing continually updated forest reconnaissance data to periodically recalculate AAC produces a forest management schedule that is responsive to changes on the BRSF. Acres of a particular forest type, say aspen or jack pine, divided by age at economic rotation for that type = AAC. As acres increase or decrease, AAC increases or decreases correspondingly. Some major causes of variation of AAC on the BRSF have been:

- Increases in forest acreage through land acquisition, resulting in a proportionate increase in the forest type acquired.
- Designation to remove clay slopes from current harvest schedule to discourage regeneration of aspen as a method to reduce slump bank erosion rates resulted in a loss of about 2000 acres to the acreage base used for calculating AAC.
- Designation and removal of the upper river spring areas from conventional harvest consideration resulted in an additional 1000 acres loss to the acreage base used for AAC.
- Acreage of special use areas such as Natural Areas and Aesthetic Zones are eliminated from calculation of AAC.
- Changes in primary stand types as the result of forest succession; for example, a stand that converts from aspen to balsam fir results in loss of that acreage to aspen type AAC and gain to the balsam fir type AAC.

Between the years 1983 and 1997, the average acreage harvested and/or thinned has been 440 acres per year. The allowable cut (AAC) based upon forest reconnaissance data has averaged 1450 acres per year of harvest and thinning for this same time period. Approximately 1000 acres of the AAC per year has not been harvested or thinned. Reasons for not completing a harvest or thinning operation at this time include lack of BRSF staff time to complete the operation, the stand not being ready for harvest or thinning at the time, and deciding to allow natural succession to take place.

Ecological Potential

Since the early 80's, BRSF forest management has included an additional element of interpretation of the landscape. Ecological potential information is used in conjunction with the forest reconnaissance to help plan sound integrated land management practices. This planning is not limited to forest cover management but also includes recreation, wildlife, fisheries, and watershed management.

The USFS Ecological Classification System (ECS) in combination with WDNR Habitat Classification System have been the primary systems used to ecologically classify the BRSF land base. Utilizing this ecological information over the past 16 years has allowed the land managers to have a better understanding of how past disturbance influenced current forest conditions and better predict the result of current land management activities.

Trends

Second growth stands are progressively exhibiting greater diversity in tree species, due primarily to the control of wildfire. These stands in general are moving into later forest succession. The rate of advancement in forest succession depends on ecological potential and natural or man-caused impacts on the stand.

Continual updating of forest reconnaissance information in conjunction with ecological interpretations of the land base will assist the land managers in developing land management plans. With time, harvest strategies will change with the continued movement of much of the forest cover types to later forest successional species. With continued and improved forest management techniques the health of the BRSF landscape will continue to improve while providing the benefits of an integrated land management philosophy.

Current Levels of Forest Management Activities

	Income
Timber sales - 10 per year	\$300,000* in 1997
clearcuts - 5 for 100 acres	
plantation thinnings - 5 for 200 acres	
Balsam bough permits - 15	\$300* in 1997
Individual Christmas tree permits- 160	\$480* in 1997
Pruning - 20 acres of red pine plantation per year over past 20 years	
Tree planting - 60 acres per year over the past 20 years	
Site preparation for natural seeding - 30 acres per year for past 5 years	

*Income does not stay with the Brule River State Forest, instead it goes into the Forestry Account of the Conservation Fund. The Conservation Fund is used for wide usage of conservation efforts.